UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/020,088	12/12/2001	Vasundhara Venkatasubramanian	50277-1869 (OID #2000-111	9986

			EXAMINER
29989	7590	03/31/2005	CHOW, CHIH CHING

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Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on *12 December 2001*.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-11* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-11* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *12 December 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

DETAILED ACTION

1.   This action is responsive to the application filed on December 12, 2001.

2.   The priority date considered for this application is December 12, 2001.

3.   Claims 1-11 have been examined.

Claim Rejections - 35 USC § 101

4.   35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

5.   Claims 1-11 are rejected under 35 USC § 101 because the claimed invention is directed to non-statutory subject matter.

Statutory subject matter requires two things:

(1) it must be in the "useful arts," U.S. Const., art. I, § 8, cl. 8, which is equivalent to the modern "industrial" or "technological arts," defined by Congress in the four categories of "process, machine, manufacture, or composition of matter" in 35 USC § 101; and if it is,

(2) it must not fall within one of the exceptions for "laws of nature, physical phenomena and abstract ideas."

Under the most recent Federal Circuit cases, transformation of data by a machine (e.g., computer) is statutory subject matter provided the claims recite a "practical application, which produce[s] a useful, concrete and tangible result." State St. Bank & Trust CO. v. Signature Financial Group, Inc., 149 F. 3d 1368, 1373, 47 USPQ2d, 1596, 1600-01 (Fed. Cir. 1998).

Claim 1 recites:

'A method for verifying shell scripts, the method comprising the computer-implemented steps of:
  prior to executing a shell script,
    performing one or more syntactic verification checks on said shell script, wherein said one or more syntactic verification checks verify conformance of said shell script to a set of syntactic guidelines;
  and,,
    performing one or more semantic verification checks on said shell script, wherein said one or more semantic verification checks verify conformance to a set of semantic guidelines.'

      In this instance, the language of the claim raises a question as to whether the claim is directed merely to an abstract idea that is not tied to a technological art, environment or machine which would result in a practical application producing a useful, concrete <u>and</u> tangible result to form the basis of statutory subject matter under 35 USC § 101.

      Furthermore, the Office's interpretation of this claim is that it does not expressly or implicitly require performance of any of the steps by a machine such as a general-purpose digital computer. Structure will not be read into the claims for the purpose of the statutory subject matter analysis even though the steps might be capable of being performed by a machine.

      On this basis, claim 1 is rejected under 35 USC § 101 as being directed to nonstatutory subject matter. Claims 2-11, which depend from claim 1, are all rejected under 35 USC § 101 for the same reasons.

Claim Rejections - 35 USC § 102

6.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7.   Claims 1-11 rejected under 35 U.S.C. 102(b) as being anticipated by "CCsh™,

The Bourne Shell Compiler", Comeau Computing, (hereinafter "CCsh").

CLAIM	CCsh

1. A method for verifying shell scripts, the method comprising the computer-implemented steps of:
   prior to executing a shell script,
      performing one or more syntactic verification checks on said shell script, wherein said one or more syntactic verification checks verify conformance of said shell script to a set of syntactic guidelines;
   and,
      performing one or more semantic verification checks on said shell script, wherein said one or more semantic verification checks verify conformance to a set of semantic guidelines.
	CCsh verifying shell scripts, see CCsh page 2, 6th paragraph, "CCsh extensively analyzes both **the syntax and semantics** of your shell script and outputs a fast C equivalent of your original script." CCsh is a Bourne Shell Compiler, it ensures the completeness of both the syntactical and semantic correctness. In the other words, the semantic guidelines/rules must be included in its compiling/verification process.

2. The method of claim 1, further comprising the step of:
   prior to executing a shell script,
      performing one or more coding organizational guidelines verification checks wherein said guideline verification checks verify conformance of said shell script to a set of one or more coding organizational guidelines.
	For the feature of claim 1 see claim 1 rejection. For the rest of claim 2 feature see CCsh, page 2, 6th paragraph, "During analysis, all shell builtin commands become mapped into fast C subroutine calls. In addition, we have rewritten some of the more popular UNIX commands, so they too become fast C subroutine calls." – the rules and guidelines can be added into the builtin

commands. Also, see 8th paragraph, "since *CCsh* does a full **syntax and semantic check**, it can be useful for doing a <u>**static source analysis**</u> on your program. This is useful for finding errors that normally would not be detected until the shell actually executed the line of code in question." -- CCsh detects semantic error BEFORE the shell script got executed.

3. The method of Claim 2, further comprising a shell grammar verification mechanism that is responsive to said shell script, wherein said shell grammar verification mechanism comprises a plurality of syntactic verification checks which when invoked perform verification of conformance of said shell script to a plurality of syntactic guidelines for said shell script.

For the feature of claim 2 see claim 2 rejection. CCsh does the translation of the shell scripts into C code, the 'grammar verification' can be built into the translating process.

4. The method of Claim 1, further comprising a guideline verifier mechanism that is responsive to said shell script, wherein said guideline verifier mechanism comprises a plurality of semantic verification checks which when invoked perform verification of conformance of said shell script to a plurality of accepted semantic guidelines for said shell script.

For the feature of claim 1 see claim 1 rejection. Same as claim 2 rejection.

5. The method of Claim 4, wherein said guideline verifier mechanism performs a plurality of coding organizational

For the feature of claim 4 see claim 4 rejection. See claim 2 rejection.

guideline verification checks on said shell script for conformance to a plurality of accepted coding organizational guidelines for said shell script.

6. The method of Claim 3, wherein said shell grammar verification mechanism further comprises:
  a parser mechanism responsive to said shell script which performs parsing of said shell script;
and
  an error routine mechanism responsive to said shell script which performs error detection and identification for said shell script.

For the feature of claim 3 see claim 3 rejection. The syntax and semantic checking done by CCsh has to do the parsing (*parser mechanism*) and the error checking (*error routine mechanism*).

7. The method of Claim 6, wherein said parser mechanism further comprises:
  a plurality of verification checks which when invoked perform a plurality of one or more verification checks on said shell script in order to verify conformance of said shell script to a plurality of one or more accepted set of grammar rules for said shell.

For the feature of claim 6 see claim 6 rejection. CCsh must perform a plurality of verification for the syntax check for a shell script if the shell script contains a plurality of commands.

8. The method of Claim 6, wherein said error routines mechanism further comprises:
  a plurality of error routines responsive to said shell script which when invoked identify parsing errors and report if parsing has failed in said shell script.

For the feature of claim 6 see claim 6 rejection. CCsh must perform a plurality of error routines if parsing errors are detected.

9. The parser mechanism of claim 6 wherein:

said parser mechanism performs syntactic verification by breaking a stream of input characters from said shell script into a plurality of tokens; and,

said plurality of tokens are further reduced based on a set of grammar rules that are associated with said shell script.

For the feature of claim 6 see claim 6 rejection. Again, see CCsh, page 2, 6th paragraph, "During analysis, all shell builtin commands (*the shell commands are treated individually, therefore the input stream must be broken into characters from the shell script into a plurality of tokens*) become mapped into fast C subroutine calls (*the tokens are further reduced based on a set of grammar rules*)" - the grammar rules can be the mapping rules for shell commands into C subroutine calls.

10. The method of claim 6, wherein:

said error routines are invoked when said parser mechanism is unable to reduce said plurality of tokens as per the said shell script set of grammar rules.

For the feature of claim 6 see claim 6 rejection. It's obvious for the people in the art to know that when an error is detected from a shell script, an error message is produced by the system.

11. The method of Claim 4, wherein said guideline verification mechanism further comprises:

a plurality of support functions responsive to shell script which support a plurality of checks for verification of conformance to a plurality of accepted semantic guidelines and coding organizational guidelines and standards for said shell script; and,

a plurality of API functions which perform checks for guideline verification by performing a plurality of checks for verification of conformance

For the feature of claim 4 see claim 4 rejection. In order for CCsh to work, there must be support functions responsive to shell script (such as shell command parsing command, sh -n), it also contains additional UNIX commands (or even API functions) which perform checks for guideline verification, see claim 2 rejection.

to a plurality of accepted semantic
guidelines and coding organizational
guidelines and standards for said shell
script.

Conclusion

The following summarizes the status o f the claims:

35 USC § 101 rejection: Claims 1-11

35 USC § 102 rejection: Claims 1-11

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chih-Ching Chow whose telephone number is 571-272-3693. The examiner can normally be reached on 7:00am - 3:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tuan Dam can be reached on 571-272-3695. Any inquiry of a general nature of relating to the status of this application should be directed to the TC2100 Group receptionist: 571-272-2100. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Chih-Ching Chow

Examiner

Art Unit 2122

CC

ANTONY NGUYEN-BA
PRIMARY EXAMINER